

D-Effect Related Phenomena in Southern Dakelh

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1. Dakelh Dialects

Dakelh is an Athabaskan language spoken over a large portion of the central interior of British Columbia.¹ Dakelh is spoken from Fraser Lake to the East, including Stuart Lake and Trembleur Lake, as far as the Fraser River and beyond, and to the south, in the Blackwater region from around Quesnel and the Bowron Lakes to Anahim Lake in the West.

Even excluding the Bulkley Valley/Lakes District language (Babine-Witsuwit'en), which has sometimes been regarded as a dialect of Dakelh, Dakelh is dialectally quite diverse. Almost all of the literature deals with the Nak'albΛN/DzinγΛbΛN dialect, especially as spoken at Nak'azdli (Fort Saint James). This dialect is quite different in many respects from the Southern dialect group, which is itself internally fairly diverse.

The purpose of this paper is to describe a number of aspects of the phonology of Southern Dakelh dialects. All data is in the Saik'Λz dialect unless otherwise specified.²

The following outline shows the relationship of the Dakelh dialects according to my best present understanding:

(1) Relationships of Dakelh Dialects

Nak'albΛN/DzinγΛbΛN (Stuart Lake/Trembleur Lake)
Nak'azdli (Necoslie)
Binče (Pinchie)
Tače (Tachie)
K'Λzče (Grand Rapids)

¹ Dakelh is generally known in the literature as Carrier. The native term Dakelh is generally preferred by Dakelh people.

² The bulk of the Saik'Λz data comes from Dr. Mary John, Sr., OAC. Other consultants are: Alec Johnnie, Madeline Johnnie, Sophie Thomas, Ernie John, and the late Veronique George. Underlined consonants are lamino-dental. In conservative speech these contrast with apico-alveolars.

Ts'itainli (Middle River)
Yekuče (Portage)

Southern

Nechako/Fraser Lake
Leidli T'enneh (Prince George)
Saik'Λz (Stoney Creek)
Nadleh X^wAt'en (Nautley)
Stellat'en (Stellaquo)
Nyan X^wAt'en (Cheslatta)

Blackwater

Ltakoh (Red Bluff)
Ndazkoh (Nazko)
Lusk'As Dene (Kluskus)
Lk'ačo (Ulkatcho)

2. The D-Effect

The D-Effect is a set of phonological interactions in Athabaskan languages between two /d/-final prefixes, the /d/-valence prefix and the first person dual subject marker, and the following consonant, which is either the initial consonant of the verb stem or a valence prefix.

In Dakelh, the first person dual subject marker³ takes the form /id/ in the Nak'alban/Dzinγaban dialect and /idΛd/ in the Southern dialects.⁴

The valence prefixes are a set of prefixes that immediately precede the verb stem, which in almost all circumstances is the last syllable of the verb.⁵ In Dakelh there are three overt classifiers: /ɪ/, /l/, and /d/. Verbs without a valence prefix are referred to as having a zero-valence. In Dakelh it is possible for a verb to have two valence prefixes in sequence. The choice is to some extent a lexical property of the verb, but valence prefixes are involved in valence-changing derivations. For example, the /ɪ/ valence is associated with causatives:

- (2) ʔΛyi “he is eating (unspecified object)”
- (3) seʔΛyi “he is feeding me”

³ In some other Athabaskan languages the cognate prefix is a duo-plural, which is evidently its older function even within Dakelh. In the majority of Dakelh dialects the first person dual subject marker is strictly a dual, the plural being expressed by /ts'/. However, in the Lk'ačo dialect, the use of /idΛd/ in the plural has not yet been blocked by the extension of /ts'/ to first person plural. In this dialect, only /idΛd/ can be used in the dual, but both /idΛd/ and /ts'/ can be used in the plural.

⁴ If all instances of [Λ] are derived by epenthesis, as is arguably the case, the underlying representation must be /idd/. If so, this is an OCP violation.

⁵ The traditional term for these prefixes in the Athabaskanist literature is “classifier”, which is, however, misleading since they have no classificatory function whatever.

Here the stem of “eat” is /yi/ and /ʔ/ is the unspecified object prefix. In the causative in (3), the causee is marked by the first person singular object prefix /se/,⁶ and the valence prefix has been changed from zero to /ɬ/.

(4) ʔadnai “he is drinking (unspecified object)”

(5) seʔadnai “he is giving me a drink”

In (4) we have an example of a lexical /d/ valence prefix. In (5) this is replaced by /ɬ/ to make the causative.

(6) nalez “he is boiling (round object)”

(7) nesdlez “it (round object) has been boiled”

In (6) we have the active form of the verb “to cook by immersion in hot liquid or steam”. The stem is /lez/; the prefix /n/ indicates that the absolutive argument belongs to a noun class consisting primarily of round objects. This would be appropriate when describing boiling an egg. In (7) the valence prefix has been changed to /d/ to make the passive. (/es/ marks the perfective.)

Finally, some verbs have a lexical /l/ valence, as in (8). In other cases, a superficial /l/ valence results from the combination of a /d/ valence prefix and a following /ɬ/ valence prefix. For example, in (9) the transitive verb “boil (liquid)” has the /ɬ/ valence prefix. The corresponding intransitive in (10) is derived by adding a /d/ valence prefix, resulting in surface /l/. (11) is an example of “eat” with /l/ valence.

(8) nalgaih “he is running around”

(9) dandamɬ “he is boiling (liquid)”

(10) dandamɬ “it (liquid) is boiling”

(11) neʔalyi “he (horse) is grazing”

The set of interactions between either the final /d/ of the first person dual subject marker or the /d/ valence prefix and the following consonant, is referred to as the D-Effect. These interactions take place only with certain following consonants.

The chart in (12) summarizes the D-Effect in the Nak’albɔn/Dzinɣɔbɔn dialect. The first column, labelled “C₂”, represents the consonant following the /d/. The “Result” column represents the fusion of the /d/ with the following consonant produced by the D-Effect. The “1D” column contains the first person dual subject form, in which the D-Effect applies. The “3S” column contains the third person singular subject form, which reveals the stem-initial consonant.

(12) **The D-Effect in Nak’albɔn/Dzinɣɔbɔn Dialect**

⁶ This is actually the object of a null postposition and is underlyingly just /s/. A vowel is inserted by an epenthesis rule, and by another rule, which applies before glottal stop in the disjunct zone, is specified as /e/.

C ₂	Result	1D	3S	Gloss
ʔ	t'	it'ał	ʌʔał	eat
ɣ	g	igoh	ʌɣoh	string (snowshoes)
l (___V)	dl	nɪdlat	nʌlat	float around
ɫ	l	ilgi	ʌɫgi	dry
n	dn	hudnih	x ^w ʌnih	be awake
w	g ^w	ig ^w ʌs	ʌwʌs	be ticklish
y	j	hijih	hʌyih	shout
z	dz	nɪdzut	nʌzut	skate around
z	ɖz	nɪɖzʌn	nɪnzʌn	think

The condition in the case of /l/ is that /l/ be followed immediately by a vowel, that is, that it be the initial consonant of the verb stem. Where the /l/ is the valence prefix it will necessarily be followed by the initial consonant of the stem. In this case, the /d/ is invariably deleted without a trace. For example, the 3s of “run around” is *nʌlɣaɪh*, with *l*-valence. The 1d is *nɪlɣaɪh*. Here the /d/ of the 1d subject prefix /id/ disappears.

The D-Effect itself is very similar in the Southern dialects. In the chart in (13), one set of differences is due to the fact that in all Southern dialects the first person dual subject prefix is /idʌd/ rather than /id/ as in the Nak'albʌn/Dzinɣʌbʌn dialect. The only difference in the D-Effect itself is that in the Southern dialects there is no D-Effect on /ɣ/ or on /w/.⁷

(13) **The D-Effect in Saik'ʌz Dialect**

C ₂	Result	1D	3S	Gloss
ʔ	t'	idʌt'ał	ʌʔał	chew
l (___V)	dl	nɪdʌdlat	nʌlat	float around
ɫ	l	idʌɫɣaɪ	ʌɫɣaɪ	dry
n	dn	hudʌdnih	x ^w ʌnih	be awake
y	j	ʔunɪdʌjeh	ʔunʌyeh	pick berries
z	dz	nɪdʌdzut	nʌzut	skate around
z	ɖz	nɪdʌɖzʌn	nɪnzʌn	think

Where there is no D-Effect from the 1d subject prefix /idʌd/, the final /d/ disappears without a trace.

(14) **Deletion of Final /d/ of /idʌd/ (Saik'ʌz)**

⁷ The somewhat peculiar D-Effect on /w/ in the Nak'albʌn/Dzinɣʌbʌn dialect, and the fact that /ɣ/ and /w/ behave the same way in all dialects, is due to the fact that all instances of /w/ are historically derived from /ɣw/. [ɣw] is still heard from conservative speakers of the Nak'albʌn/Dzinɣʌbʌn dialect.

C ₂	1D	3S	Gloss
b	nid Δ be	n Δ be	swim around
t	k Δ nid Δ ta	k Δ n Δ ta	look for
d	nid Δ daih	n Δ daih	dance
t'	laid Δ t'oh	lait'oh	be weak
tl	did Δ tle	d Δ tle	be soft
dl	id Δ dlak	Δ dlak	lick
tl'	id Δ tl'u	Δ tl'u	weave
ts	id Δ tso	Δ tso	cry
ts'	hud Δ ts'it	x ^w Δ ts'it	fib
č	did Δ č Δ t	d Δ č Δ t	be soft
j	naid Δ juh	najuh	re-rack
č'	tad Δ č'eł	teč'eł	shoot [FA]
k	nid Δ ke	n Δ ke	go around by boat
g	tunaid Δ g Δ s	tunag Δ s	wash
k'	id Δ k'ok	Δ k'ok	drink [childish]
γ	did Δ γ Δ t	d Δ γ Δ t	saw wood
w	id Δ w Δ s	Δ w Δ s	be ticklish

3. Epenthesis After Valence /d/

Whereas the final /d/ of the first person dual subject prefix is deleted if there is no D-Effect, this is not the case with valence /d/. When valence /d/ triggers no D-Effect, an epenthetic / Δ / is inserted following the /d/ and it is retained.

The stem in (15) is /y Δ / “to handle liquid in an uncontrolled fashion”. The reflexive induces a /d/ valence prefix, which under the D-Effect rule yields /j Δ / . Compare (16), where the stem is /tle/ “handle mushy stuff”. There is no D-Effect on /tl/. Rather than deleting, as in the Nak'alb Δ n/Dzin γ Δ b Δ n dialect, the valence /d/ survives and is followed by an epenthetic / Δ / . We can tell that the second /d/ of forms like /xad Δ s Δ tle/ is a valence prefix because it follows inner subject prefixes like first person singular /s/ .

(15) To Spill Liquid on Oneself [PA]

	singular	dual	plural
1	xad Δ s Δ j Δ l	xadid Δ j Δ l	xazdij Δ l
2	xadin Δ j Δ l	xadah Δ j Δ l	xadah Δ j Δ l
3	xadij Δ l	xah Δ dij Δ l	xah Δ dij Δ l

(16) To Spill Mushy Stuff on Oneself [PA]

	singular	dual	plural
1	xad Δ s Δ d Δ tle	xadid Δ tle	xazdid Δ tle
2	xadind Δ tle	xadah Δ d Δ tle	xadah Δ d Δ tle
3	xadid Δ tle	xah Δ did Δ tle	xah Δ did Δ tle

The same phenomenon is seen in (17), where the stem begins with /č' / , and in (18), where the stem begins with /k / . In both cases, there is no D-Effect, so an epenthetic vowel is inserted and the valence /d/ is preserved.

(17) **To Shoot Oneself [PA]**

	singular	dual	plural
1	naʔdΛzΛsdΛč'i	naʔdΛzidΛč'i	naʔts'adΛsdΛč'i
2	naʔdΛzindΛč'i	naʔdΛzahdΛč'i	naʔdΛzahdΛč'i
3	naʔdadΛsdΛč'i	naʔdodΛsdΛč'i	naʔdodΛsdΛč'i

(18) **To Arrive By Boat [PA]**

	singular	dual	plural
1	huzanasdΛkΛi	huzanaidΛkΛi	huzanats'edΛkΛi
2	huzanaindΛkΛi	huzanahdΛkΛi	huzanahdΛkΛi
3	huzanadΛkΛi	huzanahedΛkΛi	huzanahedΛkΛi

Although the D-Effect itself does not differentiate between the /d/ of the first person dual subject prefix and that of the valence prefix, in Southern dialects like Saik'Λz they behave differently in that only valence /d/ is preserved by epenthesis.

4. Double /d/-Valence Prefixes

Although the received view is that there is only a single valence prefix position in the Athabaskan verb, in Dakelh at least it is clearly possible for two valence prefixes to occur in sequence.⁸ The easiest case to see is the sequence /t-d/. For example, in (19) we see that the stem of “be warm” is /zΛl/. The transitive form in (20) has the sequence /t-d/.

(19) nezΛl “it is warm”

(20) nainitdzil “he warmed it up”

Since there is no D-Effect on stem-initial /d/ in any dialect, and in the Nak'albΛn/DzinγΛbΛn dialect there is no epenthesis when valence /d/ exerts no D-Effect, there is no way in this dialect to detect the occurrence of two /d/ valence prefixes. However, in the Southern dialects this is possible. If the stem-initial consonant is one that triggers the D-Effect, the innermost /d/ valence prefix will reveal itself through the D-Effect, while the outermost /d/ valence prefix will be directly realized due to the following epenthetic vowel. In point of fact, there are a few examples of double /d/ valence prefixes in Southern Dakelh dialects.

The verb “to sing” has the root /yΛn/, which appears as /jΛn/ in the ordinary form of this verb, illustrated in (21), due to the presence of a /d/ valence prefix.

(21) **To Sing [IA]**

	singular	dual	plural
1	ΛsjΛn	idΛjΛn	ts'ΛjΛn
2	injΛn	ΛhjΛn	ΛhjΛn
3	ΛjΛn	hΛjΛn	hΛjΛn

⁸ Although descriptions of the structure of the Athabaskan verb usually only allow for one valence prefix, at the same time it is widely assumed that, at least historically, the /l/ prefix is derived from the sequence /d-l/.

There are several pieces of evidence that the true root is /y/-initial rather than /j/-initial. First, this verb is clearly related to the noun /šΔn/ “spiritual power not contained in a material substance, song”. This contrasts with *yu*⁹ “spiritual power contained in a material substance, medicine”. That *šΔn* does not merely mean “song” can be seen from such expressions as in (22). In Dakelh, as in Athabaskan generally, verb stems beginning with a voiceless fricative voice it, but Dakelh lacks /š/, the reflex of which is /y/. /yΔn/ is therefore the expected verb stem corresponding to the noun *šΔn*.

- (22) ŠΔn be yΛzetʔΔi.
 spiritual power by-means-of he-killed-him
 He killed him by hexing him.

Moreover, /yΔn/ shows up as such, with 0-valence, in the verb “to perform a shamanistic ritual”, illustrated in (23).

(23) **To Perform a Shamanistic Ritual [IA]**

	singular	dual	plural
1	dAsyΔn	didΔjΔn	ts'AdΔyΔn
2	dinyΔn	dahyΔn	dahyΔn
3	dΔyΔn	hAdΔyΔn	hAdΔyΔn

Consider now the habitual aspect of “to sing”, often used in the sense of “to practice singing”. The Imperfective Affirmative is given in (24).

(24) **To Sing [Habitual IA]**

	singular	dual	plural
1	nasdΔjΔn	naidΔjΔn	nazdΔjΔn
2	naindΔjΔn	nahdΔjΔn	nahdΔjΔn
3	nadΔjΔn	nahAdΔjΔn	nahAdΔjΔn

The /d/ here can only be the valence prefix since it follows the inner subject prefixes, such as first person singular /s/. We therefore have two instances of valence /d/ here. Similar examples are found with reflexives, which also take the /d/ valence prefix, as in (25).

- (25) dAbanasdΔjΔn “I am singing to myself”

Another verb that yields examples of double /d/ valence is “to do, work”, whose root is /ʔen/. In its basic meaning, this root normally occurs with /d/ valence, as in (26). However, the same root occurs with /t/ valence in a variety of related forms, assuring us that the root is indeed /ʔen/ rather than /t'en/. For example, the form in (27) occurs as the transitive counterpart of (26) in the “keep on doing” construction. By itself it is the euphemism for sexual intercourse.

- (26) ʔAt'en “He is working”

- (27) yAʔen “He does it/her”

⁹ The Blackwater dialects have *lamΔk* in place of *yu*.

Consider now the paradigm in (28), where the reflexive induces a /d/ valence prefix. The /d/ that appears before /ʌt'en/ must be this valence prefix since it follows the inner subject prefixes. These forms therefore contain two /d/ valence prefixes.

(28) **To Work for Onself [IA]**

	singular	dual	plural
1	dʌbanaʔʌsdʌt'en	dʌbanaʔidʌt'en	dʌbanaʔʌzdʌt'en
2	dʌbanaʔindʌt'en	dʌbanaʔahdʌt'en	dʌbanaʔahdʌt'en
3	dʌbanaʔdʌt'en	dʌbanaʔhadʌt'en	dʌbanaʔhadʌt'en

Indeed, it appears that in Dakelh it is possible to get a sequence of **three** valence prefixes. The stem “to slide” begins with a plain /z/, as seen in (29). In the restorative form in (30) we have the expected /d/ valence prefix, yielding /dz/. The form in (31)¹⁰ has two valence prefixes, /l/ followed by /d/.

Consider now (32), which on the surface has a sequence of two valence prefixes, /l/ followed by /d/. If, as is widely assumed, /l/ is derived from /d-l/, the underlying representation here is /d-l-d/. Indeed, this is supported by the relationship between (31) and (32); (32) appears to be a medio-passive of (31), whose derivation we would expect to involve the addition of a /d/ valence prefix.

(29) nʌzut “he is skating around”

(30) nadzut “he skates back”

(31) nʌkedʌldzut “he is shuffling someone else’s feet”

(32) nʌkedʌldzut “he is shuffling his own feet”

5. D-Effect Context Stem Allomorphy

A number of verb stems exhibit allomorphy in D-Effect contexts. One such stem is “to eat”. The Imperfective Affirmative paradigm of “to eat” is given in (33). The stem is evidently /yi/. However, in the first person dual the stem is /ai/ or /dai/, depending on whether the /d/ is attributed to the stem or to the first person dual subject prefix. The expected form, /ʔidʌji/, is consistently rejected.

(33) **To Eat (u.o.) [IA] ʂaik'ʌz**

	singular	dual	plural
1	ʔʌsyi	ʔidʌdai	ʔʌts'ʌyi
2	ʔinyi	ʔʌhyi	ʔʌhyi
3	ʔʌyi	ʔʌhʌyi	ʔʌhʌyi

The same allomorphy is observed in the habitual aspect. The habitual aspect is formed by the disjunct prefix /na/ together with /d/ valence.¹¹ This can be seen by

¹⁰ The meaning of this form perhaps requires some explanation. This describes the situation in which one person is helping another move his feet in a shuffling motion, as, for example, a physiotherapist might when helping a patient learn to walk again.

¹¹ The habitual aspect is used in reference to a typical instance of a habitual event.

comparing the non-habitual paradigm in (34) with the habitual paradigm in (35). The valence /d/ combines with the initial /ʔ/ of the stem to form /tʰ/.¹²

(34) **To Eat (u.o.) [IA] Nak'alb_{AN}/Dzin_γAb_{AN}**

	singular	dual	plural
1	ʔAsʔaʔ	ʔit'aʔ	ʔAts'ʔaʔ
2	ʔinʔaʔ	ʔAhʔaʔ	ʔAhʔaʔ
3	ʔAʔaʔ	ʔAhAʔaʔ	ʔAhAʔaʔ

(35) **To Eat (u.o.) [Habitual IA] Nak'alb_{AN}/Dzin_γAb_{AN}**

	singular	dual	plural
1	naʔAst'aʔ	naʔit'aʔ	naʔts'ʔaʔ
2	naʔint'aʔ	naʔAht'aʔ	naʔAht'aʔ
3	naʔAt'aʔ	naʔhAt'aʔ	naʔhAt'aʔ

In the Saik'Az dialect, however, the final syllable of the habitual of “to eat” is /dai/ rather than the expected */ji/, as seen in (36). This shows that the stem is /ai/; if the stem were /dai/ epenthesis would result in forms like first person singular */naʔAsdAdai/.

(36) **To Eat (u.o.) [Habitual IA] Saik'Az**

	singular	dual	plural
1	naʔAsdai	naʔidAdai	naʔts'Adai
2	naʔindai	naʔAhdai	naʔAhdai
3	naʔAdai	naʔhAdai	naʔhAdai

The same allomorphy is observed in the passive, which has a /d/ valence prefix. Passives are extremely rare in Dakelh except in instrumental relativizations and nominalizations, where they are common. The passive of “to eat” is found in čaiman dAčAN beʔAdai “chopsticks”, literally “Chinese sticks by means of which something is eaten”. beʔAdai is an instrumental relative, consisting of the instrumental prefix /be-/, the unspecified subject prefix /ʔ/, valence /d/, and the stem /-ai/.

The verb “to eat” has two distinct stem sets, listed in (37), one used in D-Effect contexts, the other used in all other contexts.¹³

¹² The Nak'alb_{AN}/Dzin_γAb_{AN} dialect has lost the old Athabaskan verb root for “eat”, which is preserved in the Southern dialects as /yi/, and has replaced it with /ʔaʔ/ “chew”. A residue of this root survives in the noun *dai* “food”, which consists of the /d/ valence prefix plus the root “eat”. This is found throughout Dakelh. Nouns of this type are peculiar, but there are other clear examples, such as *jan* “old age”, consisting of /d/ valence plus the root /yan/ “become old”.

¹³ Historically, this presumably reflects a vowel-initial root, with the initial /y/ epenthetic. Onset epenthesis would be unnecessary in D-Effect contexts since the /d/ would fill the onset. However, this does not seem to be possible as a synchronic analysis, for two reasons. First, the stem sets do not differ only in the onset consonant; it is unclear how these differences could be accounted for synchronically. Second, the /l/ and /l/ valence prefixes would fill the onset just as well as /d/, so there is no synchronic account of why the allomorphy is restricted to D-Effect contexts; rather, we would expect the /y/-initial forms to occur in 0-valence contexts, with the vowel-initial forms occurring in overt-valence contexts.

(37) **Stem Sets of “To Eat” (Saiḱ’ΛZ)**

Tense/Mode/Aspect	Ordinary	D-Effect
Customary	yi	ih
Imperfective Affirmative	yi	ai
Perfective Affirmative	yi	ai
Future Affirmative	yi(ł)	il
Optative Affirmative	yi	ai
Imperfective Negative	yih	ai
Perfective Negative	yil	il
Future Negative	yil	il
Optative Negative	yih	ai

In the closely related Leidli dialect, the allomorphy is similar.¹⁴ The stem sets are the same as in (37), but the special stem set is restricted to /d/-valence contexts. As (38) shows, in contrast to Saiḱ’ΛZ, the first person dual subject prefix does not trigger a special allomorph. Here again is a situation in which one of the phenomena associated with the D-Effect context has ceased to treat the two /d/s uniformly.

(38) **To Eat (u.o.) [IA] Leidli**

	singular	dual	plural
1	ʔΛsyi	ʔidΛji	ʔΛts’Λyi
2	ʔinyi	ʔΛhyi	ʔΛhyi
3	ʔΛyi	ʔΛhΛyi	ʔΛhΛyi

6. Interaction Of the D-Effect and Tl-Softening

In all of the Southern dialects, but not in the Nak’albΛn/DzinγΛbΛn dialect, there is a rule of *Tl-Softening*, whereby /tl/ becomes /ł/ immediately following /ł/. This rule is exemplified by a lovely pair of synonyms.

(39) *nedabedałloh* “lip balm, chapstick”

(40) *nedabets’Δłloh* “lip balm, chapstick”

Both are deverbal nouns derived via the instrumental prefix /be/. *neda* means “our lips”. (39) is a passive with /d/ valence, literally “that by means of which our lips are smeared”. In this we can see that the underlying form of the stem is /łoh/. (40) is active, with /ł/ valence and the indefinite subject /ts’/, literally “that by means of which one smears our lips”. Here the initial /tl/ of the stem has become /ł/ as a result of the Tl-Softening rule.

The application of Tl-Softening can also be seen in the Leidli paradigm in (41). The stem is /tlΛs/, as can be seen in the first person singular, where the rule that

¹⁴ Consultants for Leidli dialect were the late Steven Jael, Bruno Billy, Josie Paul, Mary Gouchie, Edith Frederick, and Vera Seymour.

fuses the first person singular subject prefix /s/ and the /t/ valence prefix into /s/ bleeds Tl-Softening. The first person dual prefix also has the potential to bleed Tl-Softening, since the D-Effect would change the consonant preceding the stem from /t/ into /l/. However, as the first person dual /nidaltlas/ shows, the D-Effect counterbleeds Tl-Softening.

(41) **To Knead [IA] (Leidli)**

	singular	dual	plural
1	nastlas	nidaltlas	ts'analtlas
2	niltlas	niltlas	niltlas
3	naltlas	haltlas	haltlas

The order of rule application in Leidli dialect must therefore be:

(42) **Leidli Rule Order**

- (a) 1s Subject: 1s subject /s/ + /t/ → /s/
- (b) Tl-Softening: tl → t/ t ____
- (c) D-Effect

The other Southern dialects are like Leidli in that the D-Effect counterbleeds Tl-Softening. The ordering of the rules is also as in (42). In Saik'az, the other Southern dialect in which the 1s Subject rule yields /s/, the 1s Subject rule bleeds Tl-Softening. In the other Southern dialects, in which the 1s Subject rule yields /t/, this rule feeds Tl-Softening. In these dialects, for example, “I am kneading” is /naltlas/.

There is one exception: in Saik'az dialect, the D-Effect bleeds Tl-Softening. This can be seen in (43). In the first person dual, underlying /d-t-tl/ yields /tlt/ rather than /lt/.

(43) **To Knead [IA] (Saik'az)**

	singular	dual	plural
1	nastlas	nidaltlas	ts'analtlas
2	niltlas	niltlas	niltlas
3	naltlas	haltlas	haltlas

In Saik'az dialect, therefore, the D-Effect must precede Tl-Softening. This appears to be a solid example of an instance in which dialects differ in rule ordering.

There is also a point to be made here about language deterioration. My principal source of Saik'az dialect data has been Dr. Mary John, Sr. She initially produced forms like /nidaltlas/ in (43), in which the D-Effect bleeds Tl-Softening. More recently, however, she has consistently produced forms like the Leidli forms, in which the D-Effect counterbleeds Tl-Softening.

I am confident of the forms I recorded earlier for two reasons. First, I recorded a number of different forms, on different occasions, at a time when I had not undertaken any detailed study of the questions in this paper and had no axe to grind. It does not seem likely that I would easily have made transcription errors. Second, these forms are confirmed by other speakers, including Dr. John's son, Ernie. An especially interesting consultant is Mrs. Bernadette McQuarrie, who speaks both

her father’s Nadleh dialect and her mother’s Saik’ΛZ dialect. I first asked Mrs. Mc-Quarrie about Nadleh dialect, since I had not looked at this point in Nadleh dialect with any other consultant. After obtaining the form /nid Λ l Λ s/ for “we (2) are kneading”, I asked her whether her mother would have said it the same way. She responded: “No, she would have said /nid Λ tl Λ s/.”

Since the forms in which the D-Effect bleeds Tl-Softening appear to be correct, the fact that Dr. John now produces different forms calls for an explanation other than error. The likely explanation is that the change is due to the stroke she suffered in May of 1998. Whether this favoured a rule order that has the effect of leveling the paradigm or whether this reflects the fact that she also speaks Leidli dialect and probably used it more in her early childhood than the Saik’ΛZ dialect that she has used most of her life, I cannot say. Whatever the case may be, it is interesting that rule ordering could change in the speech of an individual.